flickerFixer™
Advanced Graphics Adaptor
for the Amiga 2000®

Owner's Manual

EXPORT VERSION

LIMITED WARRANTY

MicroWay, Inc., warrants every flickerFixer it sells for 90 days, part replacement only.

MicroWay is not liable for any damages resulting from down-time or debugging time. We will not accept damaged components for replacement if the damage is a result of user abuse or incorrect installation. Defective **flickerFixer** boards must be returned in the original packing foam and container, with a return author-ization number on the shipping label. Mail to PO Box 79, Kingston, MA 02364, USA, or ship via UPS to MicroWay, Cordage Park, Building #20, Plymouth, Massachusetts 02360, USA.

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Introducing
flickerFixer™

flickerFixer is a de-interlacing display board for the Amiga 2000® personal computer. **flickerFixer** eliminates flicker and visible scan lines from the computer display. It is compatible with all display modes of the Amiga 2000.

The **flickerFixer** board plugs into the video slot of the Amiga 2000 and connects to professional-quality multiscanning or VGA compatible monitors, using the appropriate cabling (see pages 12-18).

Your **flickerFixer** shipping package should contain the following components:

> * **flickerFixer** board with two screws attached for mounting the board to the Amiga 2000
> * Alignment tool
> * A diskette containing a test pattern program and additional software
> * *flickerFixer Owner's Manual*

If any items are missing, contact your dealer or call the Technical Support Staff at MicroWay, which is always ready to offer assistance. The phone number is (508) 746-7341.

Installing
flickerFixer

```
┌─────────────────────────────────────────────┐
│                                               │
│            IMPORTANT                          │
│                                               │
│   Disconnect the power cable from the rear of │
│   the Amiga 2000 before removing the cover.   │
│   DO NOT apply power to the computer while    │
│   the cover is not in place.                  │
│                                               │
└─────────────────────────────────────────────┘
```

The **flickerFixer** board can be installed without any difficulty if you follow these steps:

1. **Remove the Amiga's cover**

   Remove the cover from the Amiga after disconnecting the power cable. Remove the two screws on the lower left side, and the two screws on the lower right side, that attach the cover to the base of the Amiga 2000.

   Orient the computer so that you are facing the rear panel. You will note that there are two screws in the top center of the rear panel. Remove the rightmost screw.

   Hold the cover on both sides and slide it away from the rear panel as you lift it upwards. Make sure as you slide the cover off that no wires are caught under the small projection attached to the center of the cover.

   Put the cover aside, along with the five screws and washers you removed.

2.   Remove the video slot cover plate

As you face the rear panel of the computer, locate the video slot cover plate which is just to the left of the power switch on the inside of the rear panel. It is held in place with two small screws on the outside of the rear panel. Remove these screws and slide the cover plate out of the computer. Save the screws and cover plate for reinstallation should you remove **flickerFixer.**

3.   Install the flickerFixer board

While facing the rear panel, locate the two video slot connectors inside the computer in front of the opening you have uncovered. Remove the **flickerFixer** board from its protective packaging, remove the screws from it, and orient the board so that the gold-plated connections are pointing down and the attached metal bracket is facing you. Align the board above the video slot connectors with the metal bracket against the inside rear panel of the computer and the nine-pin monitor connector poking through the rear panel opening. Apply gentle pressure downward to plug the board into the video slot connectors.

Using the two screws supplied with **flickerFixer,** insert the lower screw through the rear panel and screw it loosely into the thread on the metal bracket attached to the board. Gently slide the board left or right until the upper hole in the rear panel is aligned with the thread in the metal bracket. Insert the upper screw and tighten both lower and upper screws.

> **CAUTION:** Do not apply power to the computer until these screws are mounted. If the computer is turned on before these screws are inserted and tightened, both the computer and **flickerFixer** board can be seriously damaged.

4. **Replace the Amiga's cover**

    Slide the cover back on the Amiga 2000, taking care not to disturb any cables inside the computer, and secure it with the five screws and washers removed in Step 1.

5. **Connect the monitor**

    Connect a compatible monitor to the nine-pin **flickerFixer** connector using a **shielded** cable (see pages 12-18 for information concerning the proper cabling pinouts). Tighten the screws on the cable connectors at both the computer and monitor ends. Remove any monitor or peripheral connected to the Amiga's 23-pin video connecter. Replace the power cable. After the **flickerFixer** has been tested, a standard Amiga monitor may be connected to the 23-pin video connector and used simultaneously. See page 9 for details.

6. **Adjust the flickerFixer phasing**

    Locate the **flickerFixer** phasing-adjustment screw hole in the metal bracket below the nine-pin monitor connector. This may need to be adjusted with the alignment tool supplied with **flickerFixer.**

    Arrange the computer and monitor so that you have access to the phasing-adjustment screw while viewing the monitor. Turn on the computer and start the operating system in the normal manner using a Workbench disk. The Amiga 2000 should start up in its usual way. The monitor display may be shifted from its regular position and may look unusual, but it should be recognizable. Don't worry-the phasing adjustment will correct the display.

    NOTE: If the Amiga does not startup normally, see the Troubleshooting section of this manual.

Insert the supplied **flickerFixer** diskette into a drive. Double click on the disk icon and then double click on the icon named **FF TEST**. This will display a test pattern on the screen.

If the image is stable in all regions of the screen, nothing more need be done. If the image is not stable, insert the alignment tool into the phasing-adjustment screw and turn it clockwise slowly until the image is stable. This will occur in one to ten full turns of the screw. If you think you have gone too far, turn the screw counterclockwise 15 full turns and start over again. The adjustment screw cannot be damaged by turning too far, but its actual range is 15 full turns.

Note: **flickerFixer** doubles the horizontal scan rate of the display. As a result, most multiscanning monitors will not provide a full-screen display, but will put a slight border around the display (less than 1.5in.). This is inherent in the monitor, not **flickerFixer.** It does not result from faulty installation.

Troubleshooting

If the Amiga 2000 does not start up normally with **flickerFixer** installed, or if you are unable to display a stable test pattern, check for the following:

* That the monitor is compatible and is connected by the correct shielded cable to the nine-pin connector on the **flickerFixer** board.

* That nothing is connected to the Amiga 23-pin video connector. See the Monitor and Peripheral Compatibility section of this manual for information on use of this connector.

* That all external peripherals are properly connected.
* That you are using a proper Workbench start-up diskette.

If all this is correct, but you are still not able to display a stable test pattern, remove the power cord, then remove the Amiga's cover and check the following:

* That no internal cables have been dislodged.
* That the **flickerFixer** board is properly seated in the video slot connectors and is pushed in all the way.

If the problem still persists, remove the **flickerFixer** board and install it again. Replace the Amiga's cover and test it again. If you are still not able to display a stable test pattern, contact your dealer or call MicroWay' s Technical Support Staff.

If the display develops flicker, you may have to adjust the phasing adjustment screw slightly.

> Note: **flickerFixer** doubles the horizontal scan rate of the display. As a result, most multiscanning monitors will not provide a full-screen display, but will put a slight border around the display (less than 1 5in). This is inherent in the monitor, not **flickerFixer**. It does not result from faulty installation.

Using
flickerFixer

flickerFixer is compatible with all software and is transparent to the Amiga 2000. All you need to do is center the display with the Preferences program on the Workbench diskette. With the flicker removed, you will probably want to use the Workbench Interlace option in the Preferences program.

With Version 1.2 of Workbench, you must click on the Workbench Interlace ON option, select the SAVE option, and then <u>reset</u> the Amiga before the display changes to interlace mode. Check your Amiga 2000 manual for instructions on using the Preferences program.

flickerFixer will display oversize screens beyond the normal 640 x 200 (non-interlace) or 640 x 400 (interlace). If oversize screens are used, the display must be moved up and to the left using the Preferences program. Any screen up to 704 x 235 (non-interlace) or 704 x 470 (interlace) can be displayed.

Check your **flickerFixer** diskette for programs that will allow you to set up an oversize Workbench screen and modify the display in other useful ways.

On highly animated programs, a ghost effect may be evident.

> Note: **flickerFixer** doubles the horizontal scan rate of the display. As a result, most multiscanning monitors will not provide a full-screen display, but will put a slight border around the display (less than 1.5in). This is inherent in the monitor, not **flickerFixer**. It does not result from faulty installation.

Monitor and Peripheral Compatibility

flickerFixer is compatible with any monitor that accepts the signals described in the Technical Specifications section of this manual. This includes VGA (IBM PS/2™-compatible) monitors, and multiscanning monitors.

The **flickerFixer** connector pinout matches the connector on the NEC Multisync line of monitors. With these monitors and others with the same pinout, the board can be connected with the shielded one-to-one cable that is supplied with the monitor.

With most other high resolution monitors, a special cable should be available from your dealer, or one can be made according to the pinouts indicated on pages 12-18 of this manual.

flickerFixer is NOT compatible with the Amiga 1080, 1084 or 2002 monitors.

The 23-pin video connector may be used with a composite adapter or monitor while **flickerFixer** is in use. The normal Amiga video signals are available and the display is not enhanced. No device that uses the genlocking capabilities of the Amiga can be used simultaneously with **flickerFixer.** The monitor connected to **flickerFixer** should be turned off while a genlocking device is attached to the 23-pin video connector. The **flickerFixer** board **NEED NOT** be removed from the machine.

> Note: **flickerFixer** doubles the horizontal scan rate of the display. As a result, most multiscanning monitors will not provide a full-screen display, but will put a slight border around the display (less than 1.5in). This is inherent in the monitor, not **flickerFixer**. It does not result from faulty installation.

Radio and Television Interference

This equipment generates and uses radio frequency energy and, if not installed and used properly, in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. It has been type tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 155 of the Federal Communications Commission Rules, which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
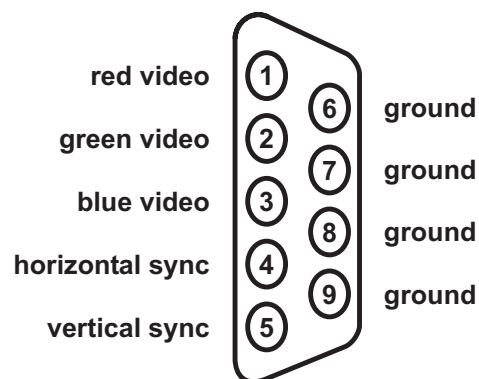
* Reorient the receiving antenna.

* Relocate the computer with respect to the receiver.

* Move the computer away from the receiver.

* Plug the computer into a different outlet so that computer and receiver are on different branch circuits.

flickerFixer (PAL Version) Technical Specifications

Horizontal Frequency	31.5 KHz
Vertical Frequency	50 Hz
Video Signals	Analog red green and blue 0.7 Vp-p, 75 Ohm, positive 0 volt black level
Sync Signals	Separate horizontal and vertical sync, TTL levels, negative logic (normally high)
Connector	Nine-pin D-SUB female

Pinout

```
red video        (1)
                      (6)  ground
green video      (2)
                      (7)  ground
blue video       (3)
                      (8)  ground
horizontal sync  (4)
                      (9)  ground
vertical sync    (5)
```

PAL version is limited to 469 lines vertical, 702 pixels horizontal.
Run *morerows -rows -26* to reduce the size of PAL workbench.

Jumper block U50 pinouts

JUMPER BLOCK	PIN	NAME
LEFT SIDE	1	GREEN
	2	GND
TOP	3	BLUE
	4	GND
TO	5	RED
	6	GND
BOTTOM	7	VSYNC
	8	GND
	9	HSYNC
RIGHT SIDE	10	PIN 9 OF CONNECTOR
	11	PIN 5 OF CONNECTOR
BOTTOM	12	PIN 4 OF CONNECTOR
	13	PIN 8 OF CONNECTOR
TO	14	PIN 3 OF CONNECTOR
	15	PIN 2 OF CONNECTOR
TOP	16	PIN 7 OF CONNECTOR
	17	PIN 1 OF CONNECTOR
	18	PIN 6 OF CONNECTOR

U50

Pin1 ○   ○ Pin18

Pin9 ○   ○ Pin10
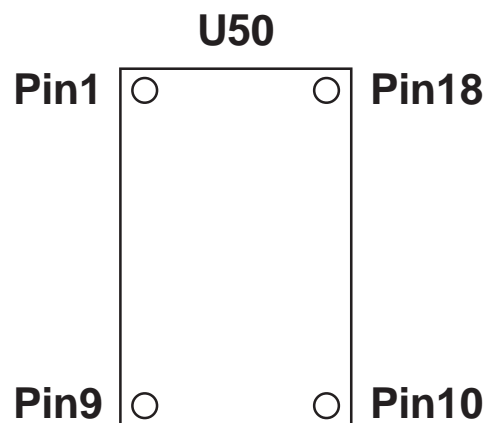
Cable Pinouts for Compatible Monitors

Cable information is provided for the following monitors:

ElectroHome ECM-1910
Taxan Multi Vision 770 Plus

flickerFixer
9 Pin D-SUB, Male   9 Pin D-SUB, Male

Signal	Pin #	Pin #
RED	1	1
GREEN	2	2
BLUE	3	3
HSYNC	4	5
VSYNC	5	4
GND	6	6
GND	7	7
GND	8	8
GND	9	9

NOTES: Do NOT use the cable that is provided with the monitor.

Set Analog/TTL switch to ANALOG.

Set Preset switch to RELEASE. Use Group A screws to adjust.

Magnavox 873 Multisync

flickerFixer
9 Pin D SUB, Male   9 Pin D SUB, Male

Signal	Pin #	Pin #
RED	1	3
GREEN	2	4
BLUE	3	S
HSYNC	4	8
VSYNC	5	9
GND	6	1
GND	7	2
GND	8	6
GND	9	7

NOTE: Do NOT use the cable that is provided with the
        monitor.

Mitsubishi AUM-1371A
Mitsubishi AUM-1381A
Thomson 4375

flickerFixer
9 Pin D-SUB, Male   25 Pin D-SUB, Male

Signal	Pin #	Pin #
RED	1	2
GREEN	2	4
BLUE	3	14
HSYNC	4	16
VSYNC	5	17
GND	6	3
GND	7	5
GND	8	15
GND	9	1

NOTES: Do NOT use the cable that is provided with the monitor.

Set Video/TTL/Analog switch to ANALOG.

NEC Multisync II
NEC Multisync Plus
NEC Multisync XL
NEC JC-1401P3A Multisync
Packard Bell PB-8530MS

flickerFixer
9 Pin D-SUB, Male   9 Pin D-SUB, Male

Signal	Pin #	Pin #
RED	1	1
GREEN	2	2
BLUE	3	3
HSYNC	4	4
VSYNC	5	5
GND	6	6
GND	7	7
GND	8	8
GND	9	9

NOTES: Use the cable provided by NEC with the NEC monitors.

If your monitor has an Analog/TTL switch, it should
be set to ANALOG.

Sony CDP-1302 Multiscan
Sony CDP-1302A Multiscan
Sony CDP-1303 Multiscan

flickerFixer
9 Pin D-SUB, Male   9 Pin D-SUB, Male

Signal	Pin #	Pin #
RED	1	3
GREEN	2	4
BLUE	3	5
HSYNC	4	8
VSYNC	5	9
GND	6	6
GND	7	7
GND	8	1
GND	9	2

NOTES: Do NOT use the cable provided with the monitor.

Set Digital/Analog switch to ANALOG.

VGA **(**IBM PS/2 compatible) monitors
Zenith ZCM-1490

flickerFixer
9 Pin D-SUB, Male   15 Pin Miniature D, Female

Signal	**Pin #**	**Pin #**
RED	1	1
GREEN	2	2
BLUE	3	3
HSYNC	4	13
VSYNC	5	14
GND	6	6
GND	7	7
GND	8	8
GND	9	5, 10

NOTES: This may be a short cable or an adapter in a 9-pin to 9-pin shell.

Cable with 15-Pin Male connector is attached to monitor.

15-Pin Miniature D is NOT a standard D SUB; it is the same size as a standard 9-pin D.

Overscan Information

To display more than 640 x 400 pixels with **flickerFixer,** use a public domain program called "morerows", which is included on the **flickerFixer** test diskette.

morerows changes the size of the workbench screen.

To use morerows, use the CLI window to copy **morerows** from the **flickerFixer** test diskette to the C directory of the workbench or the program disk you will boot up with. Then at the CLI prompt type:

> *morerows -rows r -columns c*

r is the number of additional vertical pixels for a non-interlaced screen. (Twice as many vertical pixels will be added when using an interlaced screen.)

c is the number of additional horizontal pixels for a high-resolution screen.

After running **morerows,** run the preferences program and exit by clicking on the "save" option. Then reset the system and the workbench screen will open with the new size. The image will need to be centered with the preferences centering gadget.

EXAMPLE:

morerows -rows 35 -columns 32

will produce a non-interlaced workbench of 672 x 235 and an interlaced workbench of 672 x 470.

To see the values in **morerows,** type "morerows" at the CLI prompt.

The maximum horizontal overscan supported by **flickerFixer** is 704 pixels. This is obtained by using **-columns 64** with **more -rows 35.**

NOTE: **morerows** may not be completely compatible with software packages that have their own overscan routines built in.